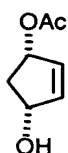


## Claims:

1. A process for preparing a 5-(acyloxy)-N,N-dialkyl-2-cyclopentene-1-acetamide of Formula III comprising:

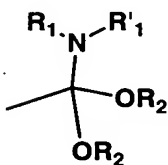
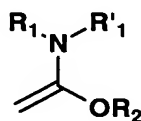
5

Reacting a 3-acyloxy-5-hydroxycyclopentene of Formula I

**Formula I**

with an amide acetal of Formula IIa or a ketene aminoacetal of Formula IIb

10

**Formula IIa****Formula IIb**

wherein;

R<sub>1</sub> and R'<sub>1</sub> are C<sub>1</sub> to C<sub>4</sub> alkyl or

15

R<sub>1</sub> and R'<sub>1</sub> taken together form a ring of 3 to 7 members;

R<sub>2</sub> is C<sub>1</sub> to C<sub>4</sub> alkyl;

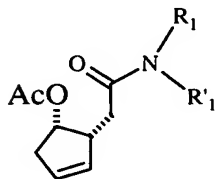
Ac is C<sub>1</sub> to C<sub>4</sub> alkanoyl;

at 90-140°C in a suitable solvent of boiling point >90°C while maintaining an alcohol

R<sub>2</sub>OH concentration of less than 3% by volume to give an

20

acylhydroxycyclopenteneacetamide of Formula III;

**Formula III**

2. A process according to Claim 1 for preparing (4R, 5S)-3,3a,6,6a-tetrahydro-2H-cyclopentan[b]furan-2-one further comprising the steps of:

Adding an alkali or alkali earth hydroxide, carbonate, bicarbonate, or quaternary ammonium hydroxide solution to give a homogeneous or biphasic mixture;

5 and

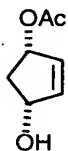
Adding a strong acid of  $pK_a < 2$  to give the title lactone of Formula IV.



**Formula IV**

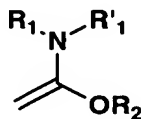
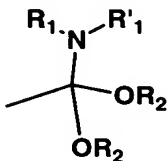
3. A product prepared by a process comprising:

10 Reacting a 3-acyloxy-5-hydroxycyclopentene of Formula I



**Formula I**

with an amide acetal of Formula IIa or a ketene aminoacetal of Formula IIb



15 **Formula IIa**

**Formula IIb**

wherein;

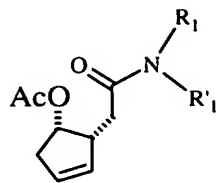
$R_1$  and  $R'_1$  are  $C_1$  to  $C_4$  alkyl or

$R_1$  and  $R'_1$  taken together form a ring of 3 to 7 members;

$R_2$  is  $C_1$  to  $C_4$  alkyl;

20 Ac is  $C_1$  to  $C_4$  alkanoyl;

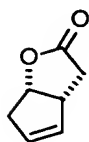
at 90-140°C in a suitable solvent of boiling point  $>90^\circ\text{C}$  while maintaining an alcohol  $R_1\text{OH}$  concentration of less than 3% by volume to give an acylhydroxycyclopenteneacetamide of Formula III;

**Formula III**

4. A product prepared by a process according to Claim 3 further comprising the steps of:

- 5            Adding an alkali or alkali earth hydroxide, carbonate, bicarbonate, or quaternary ammonium hydroxide solution to give a homogeneous or biphasic mixture; and

             Adding a strong acid of  $pK_a < 2$  to give a lactone of Formula IV.

10 **Formula IV**